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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,498	01/12/2004	Kazuya Oda	0378-0404P	8273

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EXAMINER	
QUIETT, CARRAMAH J	
ART UNIT	**PAPER NUMBER**
2622	

NOTIFICATION DATE	DELIVERY MODE
12/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/754,498	ODA ET AL.	
	Examiner	Art Unit	
	Carramah J. Quiett	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/29/2007 has been entered. Claims 1-16 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1-4, 8-11, and 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (U.S.#6,750,437) in view of Perregaux et al. (U.S. Pat. #5,119,181), and Nakano et al. (U.S.#6,094,220).

As for **claim 1**, Yamashita teaches a method of controlling a solid-state image pickup apparatus (first embodiment, figs. 2-3 and 7), comprising:

a preparing step of preparing a solid-state image pickup apparatus configured to process and output an image signal output from a solid-state image sensor that converts an optical image

representative of a field and focused on said solid-state image sensor by a lens to the image signal (col. 7, lines 4-6 and 49 – col. 8, line 11), said solid-state image sensor including a plurality of composite pixels (fig. 2, refs. 309) which are arranged in a photosensitive array (col. 3, lines 38-50) and each of which includes of a main photosensitive cell (figs. 2/3, ref. 301), having a first area, (col. 4, lines 41-50) and an auxiliary photosensitive cell (figs. 2/3, ref. 302) of a same color (inherently) as the main photosensitive cell (col. 3, lines 51-58; col. 4, lines 4-11), the auxiliary photosensitive cell, having a second area (col. 4, lines 57-62) [the auxiliary photosensitive cell inherently has the same color as the main photosensitive cell because Yamashita teaches that *a color filter* is provided for each of the pixels and a pixel corresponds to a point indicating *a color*. Please read col. 2, lines 51-58 and col. 4, lines 4-11], and respectively formed by main photosensitive portion and an auxiliary photosensitive portion (col. 3, lines 38-50; col. 7, line 49 – col. 8, line 11),

Yamashita also discloses a plurality of microlenses (fig. 3) respectively positioned in said plurality of composite pixels focusing incident light (col. 3, lines 51-58), and only a single color component filter segment positioned in each of said plurality composite pixels (col. 3, lines 51-58), a plurality of color component filter segments being provided in a preselected (indicating) color component filter pattern (col. 4, lines 4-11);

a photometry step of executing photometry with the field (col. 7, lines 49-52);

a signal processing step of processing the image signal and (col. 8, lines 2-11);

a control step of switching signal processing of said signal processing step in accordance with a result of photometry executed said photometry step (col. 7, line 49 – col. 8, line 11);

wherein said control step includes estimating influence of shading on the image signals from the relatively high photosensitive cell and the relatively low photosensitive cell (col. 12, line 60 – col. 13, line 2), and

Yamashita does not expressly disclose the auxiliary photosensitive cell having a second area smaller than the first area and a sensitivity lower than the main photosensitive cell, wherein, in the signal processing step, color difference gain processing for the image signal being switched in accordance with control of said control step to thereby lower a chroma of the image signal.

In a similar field of endeavor, Perregaúx discloses a solid-state image sensor (fig. 9 including a plurality of composite pixels (ref. 66) which are arranged in a photosensitive array and each of which includes a main photosensitive cell (ref. 66), inherently having a first area, and an auxiliary photosensitive cell (ref. 67), having a second area smaller than the first area and a sensitivity lower than the main photosensitive cell (col. 5, lines 22-32). In light of the teachings of Perregaux, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a main photosensitive cell, having a first area, and an auxiliary photosensitive cell, having a second area smaller than the first area in the method of Yamashita in order to adjust the ratio of the photosensitive areas thereby compensating for differences in spectral sensitivity (Perregaux, col. 5, lines 22-32).

In a similar field of endeavor, Nakano et al. has a solid-state image pickup apparatus called an image pickup unit comprising a solid-state image sensor called an image pickup element (fig. 1, ref. 11), which converts light having passed a lens block into an electrical signal (col. 2, lines 19-23). Nakano's lens block performs automatic focus control, automatic iris

control, and zoom control on the image signal (col. 2, lines 18-23), where the signal from the image sensor executes photometry (fig. 1, col. 2, lines 12-17). In addition, Nakano discloses a signal processor (fig. 1, ref. 11) and an image extraction unit (fig. 1, ref. 14) for processing the image signal and a controller (fig. 1, ref. 13) for switching signal processing the signal processor in accordance with components of the lens block and with a result of photometry (col. 2, lines 22-35). Lastly, in the image extraction unit, the image signal undergoes color difference gain processing (col. 2, lines 35-40) wherein the image signal is switched in accordance with a microcomputer (fig. 1, ref. 131) of the controller, which will lower a chroma of the image signal (col. 4, lines 22-30). In light of the teachings of Nakano, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Nakano's method of signal processing with Yamashita's solid-state image sensor in order to extract an object on the standardized color difference plane with high accuracy due to a change of distribution of the object on the standardized color difference plane (Nakano, col. 1, lines 29-33).

For **claim 2**, Yamashita, as modified by Perregaux and Nakano, teaches the method wherein a control step variably controls the signal processing for the image signal in accordance with a focal distance of the lens. Please read Yamashita, col. 7, line 49 – col. 8, line 11; and Nakano, col. 2, lines 12-23.

For **claim 3**, Yamashita, as modified by Perregaux and Nakano, teaches the method wherein a control step variably controls the signal processing for the image signal in accordance with a zoom position of the lens (Nakano, col. 2, lines 18-23).

For **claim 4**, Yamashita, as modified by Perregaux and Nakano, discloses the method wherein said signal-processing step that further includes tone correction processing for the image

signal switched in accordance with the control of the control step. Nakano's image pick up apparatus has a signal processor (fig. 1, ref. 11) and an image extraction unit (fig. 1, ref. 14) for processing the image signal wherein the image extraction unit allows a condition to set under the desired hue and degree of color saturation (col. 4, lines 14-21). The tonality correction provides an additional improvement for quality of the color image by controlling the white balance (Nakano, col. 1, lines 48-52). Also please read Yamashita, col. 7, line 49 – col. 8, line 11.

Claims 8-11 are apparatus claim corresponding to the method claims 1-4. Therefore, claims 8-11 are analyzed and rejected as previously discussed with respect to claims 1-4.

For **claim 15**, Yamashita, as modified by Perregaux and Nakano, teaches a method, wherein the main photosensitive cell has a region provided obliquely with regard to a horizontal direction, and the auxiliary photosensitive cell is provided in a space defined by the region (Perregaux; fig. 9; col. 5, lines 1-32).

Claim 16 is an apparatus claim corresponding to the method claim 15. Therefore, claim 16 is analyzed and rejected as previously discussed with respect to claim 15.

5. **Claims 5 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (U.S.#6,750,437) in view of Perregaux et al. (U.S. Pat. #5,119,181) and Nakano et al. (U.S.#6,094,220) as applied to claims 4 and 11, respectively above, and further in view of Nakata et al. (U.S.#6,747,696).

For **claim 5**, Yamashita, as modified by Perregaux and Nakano, discloses the method wherein said signal-processing step (Yamashita, col. 7, line 49 – col. 8, line 11). Nakano has a signal processor that is switched in accordance with the controller (fig. 1; col. 2, lines 22-35).

However, Yamashita nor Nakano and Perregaux do not expressly teach a method wherein in said signal-processing step a gamma table to use is switched in accordance with the control of the control step.

In a similar field of endeavor, Nakata has a solid-state image apparatus that is configured to process image signals. This includes a gamma correction table (fig. 7 or fig. 8) switched by a control signal (col. 13, lines 29-43 or col. 14, lines 6-26). In light of the teachings of Nakata, it would have been obvious to one of ordinary skill in the art at the time the invention was made for Yamashita, as modified by Perregaux and Nakano, to include a signal-processing step with a gamma table switched by a controller. This modification provides a means for carrying out a correcting processing for canceling noise component from image data without deteriorating image quality so as to obtain excellent image data (Nakata, col. 1, lines 66-67 and col. 2, lines 1-3).

Claim 12 is an apparatus claim corresponding to the method claim 5. Therefore, claim 12 is analyzed and rejected as previously discussed with respect to claim 5.

6. **Claims 6-7 and 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (U.S.#6,750,437) in view of Perregaux et al. (U.S. Pat. #5,119,181) and Nakano et al. (U.S.#6,094,220) as applied to claims 1 and 8, respectively above, and further in view of Ng et al. (U.S.#5,699,102).

For **claim 6**, Yamashita, as modified by Perregaux and Nakano, teaches the method wherein photometry (Yamashita, col. 7, line 49 – col. 8, line 11). However, Yamashita nor Nakano and Perregaux do not expressly teach a method wherein said control step determines the

shading on the basis of the result of photometry and switches the processing of said signal processing step in accordance with a result of determination. In figure 1 and 2, Ng has an imaging device with a controller that compensates the shading on the basis of the photometry result along with a gain/filter corrector (col. 2, lines 47-49; col. 3, lines 1-11). In light of the teaching of Ng, it would have been obvious to one of ordinary skill in the art at the time the invention was made for Yamashita, as modified by Perregaux and Nakano, to include the control step of Ng in order to standardize the image signals and thus improve the quality of the image (col. 2, lines 61-67).

For **claim 7**, Yamashita, as modified by Perregaux, Nakano, and Ng, teaches wherein said photometry step that executes (Yamashita, col. 7, line 49 – col. 8, line 11) divisional photometry with the field on the basis of the image signal output from the image sensor, and wherein said control step determines shading on the basis of a result of said divisional photometry. In the *Ng* patent, please see figure 2 and read col. 2, lines 61-67. Including the photometry step standardizes the image signals and thus improves the quality of the image.

Claims 13-14 are apparatus claims corresponding to the method claims 6-7. Therefore, claims 13-14 are analyzed and rejected as previously discussed with respect to claims 6-7.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carramah J. Quiett whose telephone number is (571) 272-7316. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 26, 2007
CJQ

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER